NO. 12 SERVICE OBSERVING DESK
LOCAL DIAL SERVICE OBSERVING CIRCUITS

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1. GENERAL

1.01 This section covers general descriptive information on the local dial service observing circuit and how it is used with the No. 12 service observing desk (covered in Section 961.501.01).

1.02 This section is issued to facilitate the use of material originally contained in Section 961.501.01, Issue 2 and Addendum 1, which is now divided into subsections. (See Section 961.501.01.)

1.03 A local dial service observing circuit which was formerly used with the No. 7 service observing desk may be used with the No. 12 service observing desk. This trunk is used for observing local originating traffic in dial offices. The local dial service observing circuit is a multiline call-distributing circuit.

1.04 In offices where local dial service observing has been done previously on a centralized basis, the circuits in the observed offices may be re-used. These circuits function with the incoming trunk and distribution circuit and the position circuit of the No. 12 service observing desk. (See Section 961.501.01.)

1.05 The local dial service observing is adapted to provide for service observing on No. 1 step-by-step AMA trunks by means of a service observing loop or trunk connector circuit and a front supervision control circuit which is an optional part of the local dial observing circuit. (See No. 1 step-by-step AMA in Section 961.501.06.) Where both subscriber line observing and AMA trunk observing are desired, separate service observing circuits must be provided.

2. LOCAL DIAL SERVICE OBSERVING CIRCUIT

2.01 Local dial observations may be made in step-by-step, panel, and No. 1 and 5 crossbar offices. The No. 1 and 5 crossbar offices may be arranged for automatic message accounting or message register operation. In the case of a No. 5 crossbar office that uses both AMA and message registers, or both CAMA automatic number identification (ANI) and message registers, the observing circuit is arranged for AMA only, or ANI only, and does not transmit message register operation indications to the service observing desk. A block diagram of local dial service observing is given in Fig. 1.

A. Equipment Elements

2.02 The local dial service observing circuit connects to individual observing line circuits. The method of connection of the various observing line circuits is discussed in the following paragraphs by type of office.

Step-by-Step Offices

2.03 The observing line circuit may be used for observing on a customer line or a step-by-

step selector. In some cases, equipment arrangements make it necessary to observe on selectors rather than on customer lines. Connection is made to a customer line, a first selector, or an incoming selector at the distributing frame terminals. A patch cord which has a plug or shoe on one end is used. This shoe clamps onto the terminal strip at the distributing frame.

2.04 A double plug on the other end of the patch cord is plugged into jacks in a jack box located at the top of the frame. The jacks may be multipled along the frame in a full or graded multiple as required. Thus, the observing line circuit may be patched to the terminals of any customer line or selector which the cord will reach.

2.05 The observing line circuits are wired to the jack boxes for connection to customer lines or selectors.

Panel Offices

2.06 The observing line circuits are used for observing on customer lines in panel offices. Connection is made to a customer line by means of a shoe at the intermediate distributing frame as in step-by-step offices. The patch cord is plugged into a jack box at the top of the distributing frame.

No. 1 Crossbar Offices

2.07 The same observing line circuit which is used in panel offices is used in No. 1 crossbar offices. The method of connection to a customer line is different.

2.08 Jacks are provided on the line link frame on the basis of two jacks per 100 lines. The jacks are wired to jacks in a patching panel. Connection is made to a customer line by means of a patch cord with a shoe on one end and a plug on the other end.

2.09 The patching panel consists of a jack field, and a cord and plug shelf arrangement. The jacks are associated with the customer lines via the jacks on the line link frame, and the plugs are associated with the observing line circuits. Thus, any customer line may be patched for observing.

2.10 One patch panel has a capacity of 39 plugs. A maximum of 182 trunks may be provided between the patch panel and the line link frames.

2.11 The observing line circuits are wired to the plugs in the patch panel on an equipment bay. Observing line circuits may be common to more than one patch panel.

No. 5 Crossbar Offices

2.12 For observing on customer lines in No. 5 crossbar offices, connection is made between a customer line and an observing line circuit at a patch panel. The panel consists of a jack field containing jacks associated with customer lines via the jacks on the line link frame, and jacks associated with the observing line circuits.

2.13 Observing on customer lines in No. 5 crossbar offices can also be done over the conductors used for AMA and/or CAMA observing. However, this arrangement can be used only if the local dial facilities are provided in the same originating office and if observations are being made at the same desk. (See Section 960.501.06.)

Service Observing Circuit

2.14 The observing line circuits connect to the local dial service observing circuit.

2.15 A maximum of 100 observing line circuits may be connected to one local dial service observing circuit.

2.16 A PCI pulsing arrangement, included within the service observing circuit, is provided in the trunk circuit for identification of the observing line circuit which is in use.

2.17 This service observing circuit provides means for observing on coin lines without affecting the operation of coin box trunk circuits.

2.18 An amplifier and pad circuit is provided in the service observing trunk. This circuit provides means for the observer to monitor on a call, and prevents noise transfer from the observing trunk to the customer line that is under observation. This circuit has a high-impedance input so that there is no noticeable transmission loss in the line.

2.19 A dial pulse amplifier circuit is provided in the trunk circuit. This circuit repeats the dial pulses from a customer line to the pen register circuit at the service observing desk.

2.20 The amplifier unit is mounted below the service observing circuit on a relay rack. The observing line circuits are mounted on the same relay rack up to the capacity of the relay rack. One service observing circuit, the maximum of 100 observing line circuits, and the amplifier circuit occupies less than one full relay rack bay, except in No. 5 crossbar offices where slightly more than one bay is required. These equipment units are located in the observed office.

2.21 The local dial service observing circuit connects a call on an observing line circuit to the incoming trunk and distribution circuit at the service observing desk.

B. Method of Operation

2.22 The general method of operation of the multiline call-distributing circuit is given in Section 961.501.01.

2.23 The local dial service observing circuit provides means for connecting a call on one of a number of observing line circuits to the service observing desk circuits. (The operation of the observing line circuits is equivalent to that of the loop connectors in other call-distributing service observing circuits.)

2.24 When the service observing circuit is placed in service by the operation of the out-of-service (OS) key at the desk, the circuit is put in an operative condition. Calls on this service observing circuit must then compete with other calls coming into the same desk position. Local and toll observations may be combined in the same position.

2.25 Before a call is connected to the desk, a test is made to insure that only calls originated after the circuit has been released are connected. Any call which is in progress at the time the service observing circuit becomes idle is prevented from being connected.

2.26 Only originating traffic is observed with this service observing circuit. Terminating traffic is excluded from connection to the observing line circuits.

2.27 If a call is not connected to an observer position within a definite time interval, the observing line circuit is released and the service observing circuit is enabled to seize a new call.

2.28 If more than one observing line circuit is seized simultaneonsly, the lowest-numbered circuit is connected to the service observing circuit and the others are released.

2.29 If a call from a No. 1 crossbar office arranged for AMA is connected to the service observing circuit, a signal is sent to the sender to indicate that the particular line is being observed. This signal causes the AMA equipment to make a service observing entry on the AMA tape. In No. 5 crossbar offices arranged for AMA, a service observing signal is sent to the marker. If the lead for this signal to the marker is open, an alarm is brought in.

2.30 If a call from an office arranged for automatic number identification (ANI) is connected to the service observing circuit, a signal is sent to the ANI equipment to indicate that the particular call is being observed.

2.31 In large offices, there may be two groups of ANI equipment. One service observing circuit may observe on lines in both groups of ANI equipment if the loop connectors are split into two groups, one group of loop connectors always being used with lines in one ANI group, and the other group of loop connectors always being used with lines in the other ANI group.

2.32 The observing line circuit, which is connected to the service observing circuit, is identified by means of PCI pulses. Loop identification is delayed for approximately 0.5 second after the call is connected to the service observing trunk to insure that the call is associated with an observing position. The observation may not be released during loop identification. The PCI pulsing circuit is common to all the observing line circuits associated with one service observing circuit. The observer may identify the subscriber line being observed by consulting the record of patching assignments.

2.33 After a call is connected to an observing position, the observed may monitor on the call. The signals which are received at the service desk are discussed in 2.35 through 2.40.

2.34 When an observation is completed, the service observing circuit may be released by the

operation of the release key. If the service observing circuit is not released, the observer remains connected to the same observing line circuit, and consequently, to the same customer line. This feature is provided so that if a call is not completed for any reason, repeated attempts by the calling customer may be observed.

C. Signals to Observer

2.35 The following signals are received at the service observing desk in connection with local dial service observing.

2.36 When a call on the service observing circuit is connected to a position, the trunk lamp lights. This lamp remains lighted until the obseration is released.

2.37 The observing line circuit which is connected to the service observing trunk is identified. One lamp in each of two groups, tens and units, lights to give the number of the observing line circuit. If loop identification is not given within a definite period of time, the identification failure (IF) lamp lights. The loop number display or the IF lamp remains lighted until the observation is released.

2.38 These are the only lamp signals which are displayed at the service observing desk.

2.39 A pen register is provided in each position which is arranged for local dial observing. (See Section 961.501.01.) As the calling customer dials the called number, the dial pulses are registered on the tape in the pen register. When observing on offices arranged for message register operation, the operation of a message register may also be recorded on the tape. This feature is optional. A low tone is heard by the observer when a customer message register operates. This tone signal is heard whether or not a pen register record is made of message register operation. The pen register records a disconnect signal from the calling customer. A single pen register is used if only the called number is registered. If message register operation and the called number are recorded, a double pen register is used.

2.40 When a call on a coin line is being observed, the observer hears a high tone when a coin is returned, and a low tone when a coin is collected.

3. POSITION CIRCUIT

3.01 The call-distributing service observing circuits for local dial and all other classes of service observing are brought into the service observing desk through the incoming trunk and distribution circuit. This circuit connects the service observing circuits to the position circuits of the desk. (See Section 961.501.01.)

A. Equipment Elements for Local Dial Class

3.02 Figures for loop identification and recording are required. Loop identification lamps, an IF lamp, and a loop identification timing circuit are required.

3.03 A pen register for recording the dial pulses is required in each position arranged for local dial observing. A single pen register is required to record the number dialed; a double pen register is required to record the message register operation and the number dialed.

3.04 A PCO key is provided at each position to disconnect the pen register if it chatters during a nondialing period.

3.05 An amplifier and volume limiter are provided to assure optimum transmission to the observer.

4. MAINTENANCE FEATURES OF POSITION AND TELEPHONE CIRCUITS ARRANGED FOR LOCAL DIAL OBSERVING

4.01 The position and telephone circuits, as employed for local dial service observing, can be tested on an operational basis from the local dial office to the No. 12 service observing desk with a testman at each respective location.

4.02 A talking trunk is required, and is established between these two points via the intraoffice trunk as shown in a figure in Section 961.501.01.

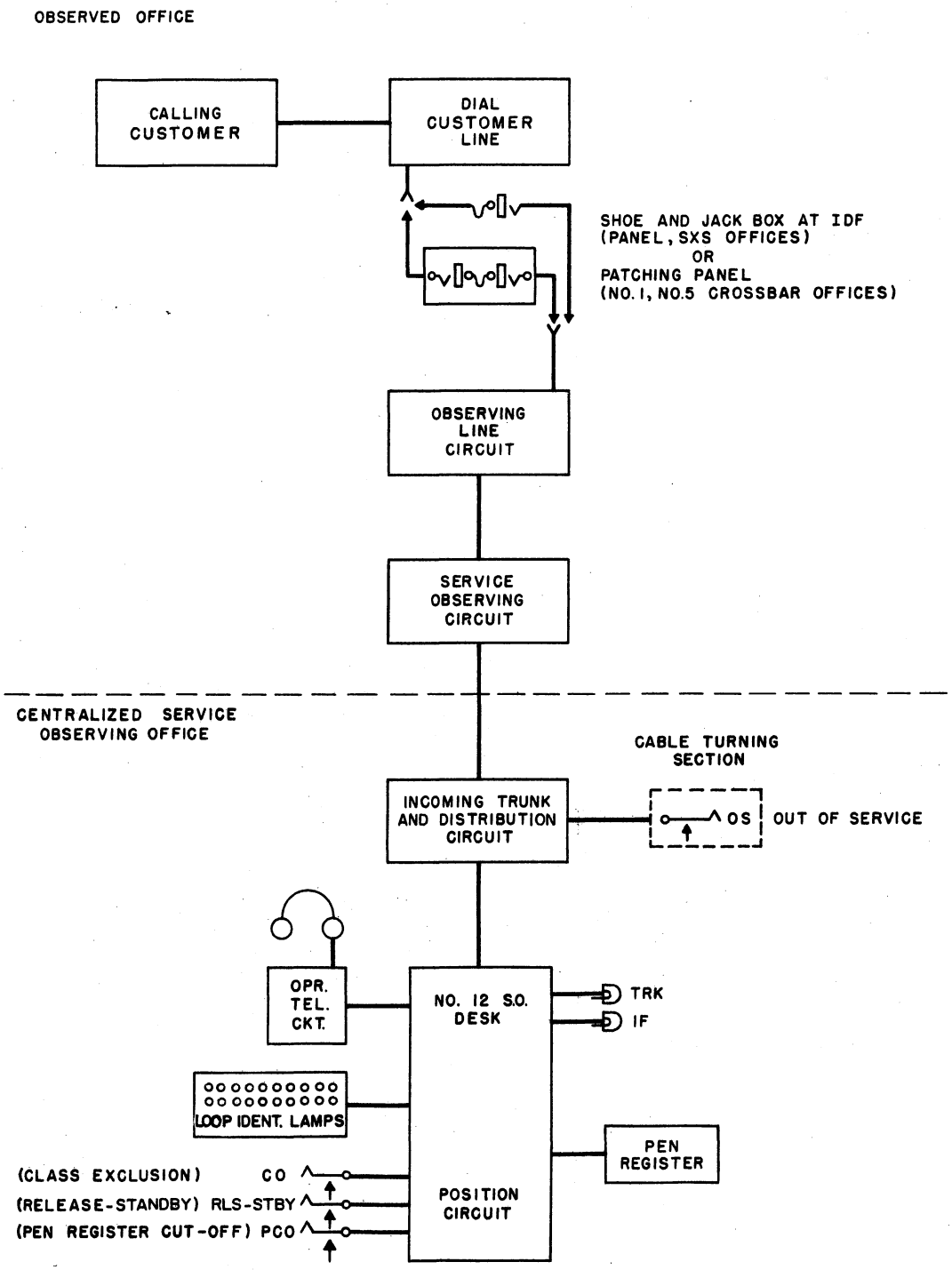

Fig. 1 — Local Dial Service Observing